

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. 2002-NM-27-AD; Amendment 39-13267; AD 2003-16-14]**

**RIN 2120-AA64**

### **Airworthiness Directives; Boeing Model 747 Series Airplanes Equipped with Pratt & Whitney JT9D-3 or JT9D-7 Series Engines (except JT9D-70 Series Engines)**

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule.

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**SUMMARY:** This amendment adopts a new airworthiness directive (AD), applicable to Boeing Model 747 series airplanes equipped with Pratt & Whitney JT9D-3 or JT9D-7 series engines (except JT9D-70 series engines), that requires detailed inspections of the upper and lower surface of the forward lower spar of the nacelle strut for cracking or other damage, and for any loose or damaged fasteners. This amendment also requires replacement of loose or damaged fasteners and, if necessary, associated repair of the forward lower spar. This action is necessary to detect and correct cracking or other damage to the upper or lower surface of the forward lower spar and any loose or damaged fasteners, which could result in reduced structural capability of nacelle struts one through four, and possible separation of a strut and engine from the airplane during flight. This action is intended to address the identified unsafe condition.

**DATES:** Effective September 22, 2003.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of September 22, 2003.

**ADDRESSES:** The service information referenced in this AD may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207. This information may be examined at the Federal Aviation Administration (FAA), Transport Airplane Directorate, Rules Docket, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

**FOR FURTHER INFORMATION CONTACT:** Tamara Anderson, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 917-6421; fax (425) 917-6590.

**SUPPLEMENTARY INFORMATION:** A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an airworthiness directive (AD) that is applicable to Boeing Model 747 series airplanes equipped with Pratt & Whitney JT9D-3 or JT9D-7 series engines (except JT9D-70 series engines) was published in the Federal Register on May 29, 2003 (68 FR 31994). That action proposed to require detailed inspections of the upper and lower surface of the forward lower spar of the nacelle strut for cracking or other damage, and for any loose or damaged fasteners. That action also proposed to require replacement of loose or damaged fasteners and, if necessary, associated repair of the forward lower spar.

## **Comments**

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the single comment received.

The commenter, an operator, states that the six-month initial inspection threshold may require inspections to occur outside of scheduled heavy maintenance checks, thereby requiring special routing of airplanes to enable inspections to occur at maintenance facilities with appropriate equipment and personnel. The commenter further states that the accomplishment of detailed visual inspections outside of heavy maintenance checks is not desirable and should be avoided. However, the commenter acknowledges that the proposed AD appears to provide sufficient justification for the initial inspection threshold.

From this comment, we infer that the commenter supports the proposed rule.

## **Conclusion**

After careful review of the available data, including the comment noted above, the FAA has determined that air safety and the public interest require the adoption of the rule as proposed.

## **Changes to 14 CFR Part 39/Effect on the AD**

On July 10, 2002, the FAA issued a new version of 14 CFR part 39 (67 FR 47997, July 22, 2002), which governs the FAA's airworthiness directives system. The regulation now includes material that relates to altered products, special flight permits, and alternative methods of compliance. However, for clarity and consistency in this final rule, we have retained the language of the NPRM regarding that material.

## **Change to Labor Rate Estimate**

We have reviewed the figures we have used over the past several years to calculate AD costs to operators. To account for various inflationary costs in the airline industry, we find it necessary to increase the labor rate used in these calculations from \$60 per work hour to \$65 per work hour. The cost impact information, below, reflects this increase in the specified hourly labor rate.

## **Cost Impact**

There are approximately 366 airplanes of the affected design in the worldwide fleet. The FAA estimates that 115 airplanes of U.S. registry will be affected by this AD, that it will take from 20 to 64 work hours per airplane to accomplish the required inspections, and that the average labor rate is \$65 per work hour. Based on these figures, the cost impact of the AD on U.S. operators is estimated to be between \$1,300 and \$4,160 per airplane.

The cost impact figure discussed above is based on assumptions that no operator has yet accomplished any of the requirements of this AD action, and that no operator would accomplish those actions in the future if this AD were not adopted. The cost impact figures discussed in AD rulemaking actions represent only the time necessary to perform the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions.

### **Regulatory Impact**

The regulations adopted herein will not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained from the Rules Docket at the location provided under the caption ADDRESSES.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **Adoption of the Amendment**

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

### **PART 39—AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

### **§ 39.13 [Amended]**

2. Section 39.13 is amended by adding the following new airworthiness directive:

# AIRWORTHINESS DIRECTIVE

Aircraft Certification Service  
Washington, DC



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

*We post ADs on the internet at "[www.faa.gov](http://www.faa.gov)"*

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

**2003-16-14 Boeing:** Amendment 39-13267. Docket 2002-NM-27-AD.

**Applicability:** Model 747 series airplanes, equipped with Pratt & Whitney JT9D-3 or JT9D-7 series engines (excluding JT9D-70 series engines), as listed in Boeing Alert Service Bulletin 747-54A2209, dated November 8, 2001; certificated in any category.

**Note 1:** This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (g) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

**Compliance:** Required as indicated, unless accomplished previously.

To detect and correct cracking or other damage to the structure of the upper or lower surface of the forward lower spar and any loose or damaged fasteners, which could result in reduced structural capability of nacelle struts one through four, and possible separation of the strut and engine from the airplane during flight, accomplish the following:

## **Inspection of Upper Surface of Forward Lower Spar**

(a) At the later of the times shown in paragraphs (a)(1) and (a)(2) of this AD: Perform a detailed inspection of the upper surface of the forward lower spar to detect cracks, fretting damage, and any loose or damaged fasteners, in accordance with Part 1 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-54A2209, dated November 8, 2001.

(1) Within 500 flight cycles, but no sooner than 300 flight cycles, after modification of the strut in accordance with AD 95-10-16, amendment 39-2933; or

(2) Within 6 months after the effective date of this AD.

**Note 2:** For the purposes of this AD, a detailed inspection is defined as: "An intensive visual examination of a specific structural area, system, installation, or assembly to detect damage, failure, or irregularity. Available lighting is normally supplemented with a direct source of good lighting at intensity deemed appropriate by the inspector. Inspection aids such as mirror, magnifying lenses, etc., may be used. Surface cleaning and elaborate access procedures may be required."

## **Inspection of Lower Surface of Forward Lower Spar**

(b) If the detailed inspection required by paragraph (a) of this AD reveals any crack or fretting damage, or any loose or damaged fastener: Prior to further flight, perform a detailed inspection of the lower surface of the forward lower spar to detect cracks, fretting damage, and any loose or damaged fasteners, in accordance with Part 2 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-54A2209, dated November 8, 2001.

### **Follow-up Inspection**

(c) If the detailed inspection of the upper surface of the forward lower spar required by paragraph (a) of this AD reveals no crack or fretting damage and no loose or damaged fastener: At the later of the times specified in paragraphs (c)(1) and (c)(2) of this AD, repeat the detailed inspection of the upper surface of the forward lower spar and perform a detailed inspection of the lower surface of the forward lower spar, in accordance with Parts 1 and 2, respectively, of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-54A2209, dated November 8, 2001.

(1) Within 1,500 flight cycles, but no sooner than 1,300 flight cycles, after modification of the strut, in accordance with AD 95-10-16; or

(2) Within 18 months after the effective date of this AD.

### **Optional Follow-up Inspection**

(d) If the detailed inspection of the upper surface of the forward lower spar required by paragraph (a) of this AD reveals no crack or fretting damage, and no loose or damaged fastener: Prior to further flight, the operator may elect to perform a detailed inspection of the lower surface of the forward lower spar to detect cracks, fretting damage, and any loose or damaged fasteners, in accordance with Part 2 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-54A2209, dated November 8, 2001, provided that the airplane has accumulated at least 1,300 flight cycles since modification of the strut per AD 95-10-16.

### **Corrective Action**

(e) If any detailed inspection described in paragraph (a), (b), (c), or (d) of this AD reveals any crack or fretting damage to the upper or lower surface of the forward lower spar or any loose or damaged fastener: Prior to further flight, accomplish the actions specified in paragraph (e)(1) or (e)(2) of this AD, as applicable.

(1) If the crack or fretting damage to the upper or lower surface of the forward lower spar falls within the parameters specified in Figure 4 or 5 (as applicable) of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-54A2209, dated November 8, 2001, and the airplane has accumulated 1,300 flight cycles or more since modification of the strut per AD 95-10-16: Remove any loose or damaged fasteners, repair any cracks or fretting damage to the upper or lower surface of the forward lower spar, and install new fasteners, in accordance with the Accomplishment Instructions of the service bulletin. No further action is required by this AD.

(2) If the crack or fretting damage to the upper or lower surface of the forward lower spar does not fall within the parameters specified in Figure 4 or 5 (as applicable) of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-54A2209, dated November 8, 2001, or if the airplane has accumulated fewer than 1,300 flight cycles since modification of the strut per AD 95-10-16: Accomplish additional repair per a method approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA, or per data meeting the type certification basis of the airplane

approved by a Boeing Company Designated Engineering Representative who has been authorized by the Manager, Seattle ACO, to make such findings. For a repair method to be approved as required by this paragraph, the approval must specifically reference this AD.

(f) If the detailed inspection specified in paragraph (c) or (d) of this AD reveals no cracks or other damage to the upper or lower surface of the forward lower spar and no loose or damaged fasteners, no further action is required by this AD.

### **Alternative Methods of Compliance**

(g) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Seattle ACO, FAA. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Seattle ACO.

**Note 3:** Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Seattle ACO.

### **Special Flight Permits**

(h) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

### **Incorporation by Reference**

(i) Unless otherwise specified in this AD, the actions shall be done in accordance with Boeing Alert Service Bulletin 747-54A2209, dated November 8, 2001. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207. Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

### **Effective Date**

(j) This amendment becomes effective on September 22, 2003.

Issued in Renton, Washington, on August 6, 2003.  
Neil D. Schalekamp,  
Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.  
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